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B.Tech

PCME4304

5th **Semester Back Examination 2017-18**
Machining Science and Technology
BRANCH : MECH, PLASTIC
Time: 3 Hours
Max Marks: 70
Q.CODE: B272
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1   **Answer the following questions:**   **(2 x 10)**
  a)   What is the function of cone pulley drive in lathe machines?
  b)   What is fixture?
  c)   What is down milling
  d)   What is lapping operation
  e)   Where the cutting tool in a milling machine is mounted on?
  f)   What is the Taylor's equation?
  g)   Differentiate the capstan and turret lathe.
  h)   What are the limitations in AJM?
  i)   What is Flank wear?
  j)   What are the advantages in Ultrasonic Machining?

Q2 a) Difference between orthogonal and oblique cutting. What s the utility of orthogonal cutting?   **(5)**
  b) Derive the expression for chip reduction coefficient in single point cutting.   **(5)**

Q3 a) What are the desirable characteristics of cutting tool material? Describe them briefly.   **(5)**
  b) Draw the Merchants force diagram and show the various forces acting in the chip.   **(5)**

Q4 a) Describe in brief how you measure tool life. What are the factors affect the tool life?   **(5)**
  b) What are the purposes of cutting fluid? What are the types?   **(5)**

Q5 **a)** Describe the basic parts of an engine lathe? **(5)**

b) How the lathe machine is specified? Discuss. **(5)**

Q6 **a)** What are the different methods of indexing? Describe briefly. **(5)**

b) What are the differences between planer and shaper machine? **(5)**

Q7 Explain the working principle of ECM and derive the expression of material removal rate. **(10)**

Q8 **Write short answer on any TWO:** **(5 x 2)**

a) Plasma Arc Machining

b) EDM

c) AJM

d) Gear hobbing